Policy and Technical Issues Associated With Updating the Fish Consumption Rate Established Under MTCA

Introduction & Purpose

The purpose of this paper is to compile a list of technical and policy issues relevant to characterizing fish consumption rates for high exposure population groups. Ecology currently considers these issues when establishing site-specific requirements at sites undergoing cleanup under the Model Toxics Control Act (MTCA). Ecology may also consider these issues when evaluating whether and how to modify the MTCA Cleanup Regulation during the five-year rule review.

Ecology is asking the Science Advisory Board to review this issue paper and provide advice on:

- Are there other issues Ecology should consider in this evaluation?
- What issues does the Board consider the highest priority for Ecology to consider?
- What sources of information are Board members aware of that would help with Ecology's evaluation of these issues?

Background Information

The Model Toxics Control Act (MTCA) Cleanup Regulation establishes cleanup levels for surface waters using a fish consumption rate of 54[1] grams/day (g/day) and a fish diet fraction of 0.5 (WAC 173-340-730, Equations 730-1 and 730-2). The default fish consumption rate and fish diet fraction results in an effective fish consumption rate of 27 g/day. Ecology uses this value to establish MTCA risk-based cleanup levels for surface waters.

When developing the original cleanup standards, several people expressed the opinion that the default fish consumption rate does not accurately reflect the diet and consumption patterns of some populations (for example Native Americans and Asian Pacific Islanders). In the final responsiveness summary, Ecology agreed there may be areas where site-specific considerations would require the use of higher fish consumption rates and stated that: "…Ecology may utilize a higher site-specific value in order to protect populations that are at greater risk than the general population (e.g. Indian tribes consuming large quantities of local fish)…" WAC 173-340-730 (1)(e) states that "..[t]he department may require more stringent cleanup levels than specified in this section where necessary to protect other beneficial uses or otherwise protect human health and the environment…" WAC 173-340-708 (10) allows for the default fish consumption rate to be changed under MTCA "when necessary to establish a more stringent cleanup level to protect human health." Ecology provided this flexibility to change the default fish consumption rate in recognition of new evolving information that may become available for different fish-consuming populations and site-specific conditions.

[1] Ecology determined that the 54 g/day was a reasonable maximum exposure for recreational fisher people based on early 1980 survey information (Puffer, 1981 and Pierce et. al., 1981).

Policy and Technical Issues

There is a wide range of technical and policy issues associated with characterizing fish consumption rates for high fish consuming populations and using that information to establish cleanup levels. Issues include:

- Identifying High Fish-Consuming Populations: There are several population groups that generally consume large amounts of fish and shellfish. These include Asian and Pacific Islanders, Native American populations and subsistence fisher people.
    - What is a "high fish consuming population" and what factors should Ecology consider (statewide or site-specific) when identifying these population groups for purposes of establishing cleanup requirements under MTCA?
    - How should Ecology take into account the variability in fish consumption rates among different groups (for example different ethnic groups, different tribal populations) within the broader population groups (Asian Pacific Islanders, Native Americans)?
    - Are there groups within the high fish-consuming populations that may warrant special consideration or protection (for example young children, pregnant women, and breast-feeding infants)?
- Integration and Coordination with Other Federal and State Regulatory Requirements: Indian tribes in Washington state have treaty-reserved fishing rights. Many of these tribes have obtained approval for water quality standards under the federal Clean Water Act that are based on fish consumption rates higher than that used under MTCA and State water quality law. Ecology's Water Quality Program generally relies on the federal national toxics rule (NTR) when establishing discharge limits for toxic substances. This rule is based on a fish consumption rate different from that used under MTCA.
    - How should tribal treaty-reserved fishing rights be considered in developing a fish consumption rate under MTCA?
    - How should tribal water quality standards be considered in developing a fish consumption rate under MTCA?
    - How should state and federal water quality standards be considered in developing a fish consumption rate under MTCA?
- Decision-Making Framework: Currently, the MTCA rule establishes a default fish consumption rate and fish diet fraction. The rule also provides a fairly cumbersome process for changing these values on a site-specific basis where necessary to protect human health and the environment.
    - Should Ecology amend the rule to establish a single default fish consumption rates for high fish-consuming populations? If so, how should Ecology consider the variability in fish consumption habits among different populations?
    - Should Ecology amend the rule to establish multiple default fish consumption rates for high fish-consuming populations?

- Should Ecology amend the rule to establish a less cumbersome process for establishing area- or site-specific fish consumption rates for high fish-consuming populations?
- How should this process be structured (for example roles for other agencies or governments)?
- Should Ecology amend the rule to provide a phased decision-making process that includes both default fish consumption rates and a process for establishing site-specific values (similar to terrestrial ecological evaluation process)?
- What is the proper balance between rule requirements and guidance?

- Methods for Characterizing Fish Consumption Rates: There is a wide range of technical and policy issues associated with characterizing fish consumption rates for high fish-consuming populations. These include:
  - What factors and criteria should Ecology consider when evaluating the adequacy of individual studies?
  - How should information on fish preparation, cooking, and fish parts cooked and/or eaten by high fish-consuming populations be considered when developing fish consumption rate under MTCA?
  - How should Ecology consider differences in fish consumption patterns in freshwater and marine waters?
  - How should Ecology consider fish type (for example anadromous or pelagic fish species) when establishing fish consumption rates that will be used to establish surface water cleanup levels?
  - Is it fitting to use census based information and to make adjustments in consideration of potential exposure to contaminated fish? If so, how should those adjustments be made? Should similar adjustments be made for other exposure factors (for example body weight, fish diet fraction, frequency and duration of exposure)?
  - Pacific Northwest fish consumption has already been reduced by depleted resources in types and amounts of fish caught and consumed. How should Ecology account for the following factors:
    - Regardless of fish consumption advisories, high-end subsistence fish consumers will continue to catch and eat fish until their requirements (cultural, social, and nutritional) are fulfilled.
    - For selected populations seafood is not only a source of food and protein but has a significant cultural identity, an important economic part of the culture or ethnic group, as well as personal preference as a primary food source.
    - If the fish were available then higher fish consumption may occur for the high-end subsistence and recreational fish consumers which means, for these selected populations, fish consumption is consistently underestimated.

- Reasonable Maximum Exposure: How should Ecology account for the variability in fish consumption rates within high fish-consuming populations?
    - What statistical parameter should Ecology use to characterize fish consumption rates for high fish-consuming populations (for example arithmetic mean, 90th percentile, 95th percentile and so forth)?
    - How should Ecology account for the variability in fish consumption rates among different groups (for example different ethnic groups and high risk groups) within a high fish-consuming population?

Next Steps

- Ecology will consult with EPA-Region 10, Washington Department of Health, and the MTCA Science Advisory Board to identify technical and policy issues.
- Ecology will compile available information on fish consumption rates for high fish-consuming populations.
- Ecology will meet with representatives of different ethnic cultural associations to discuss this issue.
- Ecology will meet with representatives of tribal governments to discuss this issue.
- Ecology will hold public scoping meetings to identify potential rulemaking issues.